

ASSESSMENT OF THE PREVALENCE OF ORAL HABITS IN 3-6 YEAR OLD SCHOOL GOING CHILDREN IN CHANDIGARH AREA

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ABSTRACT

Aim: This study was designed to assess the prevalence of various oral habits among 3-6 years old school children in Chandigarh. **Method:** Fifteen different public schools were randomly selected among 45 public schools in Chandigarh area from where 938 children (3-6 yr) were randomly selected (511 boys and 427 girls) with the objectives of recording the prevalence of oral habits. Statistical analysis was carried out using SPSS 10.0 software and the statistical significance of oral habits as related to age groups and sex were calculated by using ANOVA test. **Results:** The overall prevalence of oral habits in children was 11.7%. Nail biting was the commonest habit (5.5%) followed by thumb sucking (4.05%), tongue thrusting (1.8%), mouth breathing(0.3%) and lip biting(0%). Also, there were no significant differences between boys and girls with respect to prevalence of oral habits. However, a significant difference was observed between different age groups with respect to the prevalence of oral habits. **Conclusions:** The data revealed that a significant percentage of the children had deleterious oral habits which can contribute towards the development of malocclusion. This helps in identifying children who are in need to intercept the oral habits at earliest to avoid future occurrence of malocclusion.

Key words: Malocclusion, Oral Habits, Prevalence, Preventive Orthodontics

INTRODUCTION

An abnormal habit is a sign of lack of harmony between an individual and his environment. The American Academy of Pediatric Dentistry (AAPD) recognizes that an infant's, child's, or adolescent's well-being can be affected by oral habits creating a need for effective individual management of the same. Oral habits, especially if they persist beyond the preschool age, have been implicated as an important environmental etiological factor associated with the development of malocclusion.¹ Oral habits are associated with dentoalveolar and/or skeletal deformation in some patients. The amount of dentoalveolar skeletal deformation is related to the frequency, duration, direction, and intensity of

certain habits and should be assessed by the dentist. Changes that can occur to the dentoalveolar structures may include anterior and or posterior open bite/ or crossbite, interference of normal tooth position and eruption, alteration of bone growth, and cross bites.² A study done by Farsi and Salama in 583 Saudi children aged 3-5 years, selected through stratified cluster sampling technique found the prevalence of sucking habits to be close to 48% with dummy sucking being the dominant habit. Most dummy suckers were found to have stopped the habit during their earlier years, while digit suckers continued the habit beyond 5 years. The children with a digit sucking habit had a significantly higher prevalence of distal molar and canine

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relationships, larger over jets and open bites compared to children without sucking habits.³ Oral habits, if extend beyond the preschool age may cause various types of malocclusions, that in future may require orthodontic intervention.^{4,5} As the duration of the habit increases, the probability of a child developing a class II malocclusion also increases. If the habit was stopped early (before 6 years), the effects on occlusion were often transitory.⁶

There is lack of published data on prevalence of various oral habits in school-going children of Chandigarh in the age range of 3-6 years, the present study was planned to assess the same.

MATERIALS AND METHODS

A total of 938 children (511 boys and 427 girls) in the age range of 3-6 yrs were selected from 15 different public schools randomly selected from the list of public schools (45 schools) of Chandigarh. The subjects with congenitally missing teeth were excluded from the study. The children with known history of any systemic disease were excluded from the study.

Implementing the study

Informed parental consent was obtained before commencing the study. Prior to clinical examination, parents were given a questionnaire fill the medical history and history of any oral habit like thumb sucking, nail biting and lip sucking habits and were also informed about the procedure. The selected children were examined by three dentists who were earlier trained to the desired level of consistency. As there was possibility that the children or parents were not aware of tongue thrusting and mouth breathing habits, the children were diagnosed for these habits at the time of examination and only the presence or absence of habit was recorded. Clinical examination was done using mirror and water tests under natural day light.

STATISTICAL ANALYSIS

The data analysis was carried out using SPSS 10.0 statistical software. Descriptive statistics including the frequency distribution for males and females,

Percentages of males and females affected with the oral habit, and the prevalence pattern according to different age groups were calculated. ANOVA test was used to calculate inferential statistics and to evaluate statistical significance for oral habits between male and female children and between different age groups. A significance level of $p < 0.05$ was adopted.

RESULTS

The sample distribution according to age and sex is presented in Table 1. Out of the total 938 children examined, the oral habits were observed in 110 school children, representing an overall prevalence of 11.7% (Table 2). Nail biting was the most prevalent habit (10.6%) followed by thumb sucking (7.7%), tongue thrusting (3.7%). Mouth breathing was seen in only 0.5 % of the children. Lip biting was not seen in any of the children. The percentage prevalence of oral habits was more in males (14.09%) as compared to females (8.9%).

Table 1: Distribution of children according to age and sex

Age	Total	Boys		Girls	
	N	N	%	N	%
3 yrs	208	116	55.7	92	44.2
4 yrs	250	130	52	120	48
5 yrs	210	125	59.7	85	40.4
6 yrs	270	140	51.8	130	48.1
Total	938	511		427	

Table 2: Prevalence of oral habits with respect to sex

Variables	Total N=938		Males N= 511		Females N= 427	
	N	%	n	%	n	%
Nail biting	52	5.5	40	7.8	12	2.8
Lip biting	0	0	0	0	0	0
Tongue thrusting	17	1.8	3	0.5	14	3.2
Thumb sucking	38	4.05	27	5.2	11	2.5
Mouth breathing	3	0.3	2	0.3	1	0.2
Total	110	11.7	72	14.09	38	8.9

Prevalence of oral habits in different age groups is shown in Table 3. The prevalence of oral habits in 3

Table 3: Prevalence of oral habits with respect to age

Age in years	Total N= 938	Total %age	Thumb sucking		Tongue thrusting		Nail biting		Mouth breathing		Lip biting	
			n	%	N	%	n	%	n	%	N	%
3	208	17.3	18	8.6	3	1.4	15	7.2	0	0	0	0
4	250	15.2	7	2.8	0	1.6	30	12	1	0.4	0	0
5	210	9.5	3	1.4	13	6.1	3	1.4	1	0.4	0	0
6	270	5.9	10	3.7	1	0.3	4	1.4	1	0.3	0	0

Table 4. Frequency distribution ratio according to age and sex

	3 years				4 years				5 years				6 years				ANOVA	
	Males		Female		Males		Female		Males		Female		Males		Female		F ratio	Sign.
	n	%	n	%	n	%	n	%	n	%	n	%	n	%				
T.S	10	8.6	8	8.6	3	2.3	4	3.3	2	1.6	1	1.1	4	2.8	6	4.6	5.4	0.001*
T.T	2	1.7	1	1	0	0	0	0	6	4.8	7	8.2	1	0.7	0	0	10.4	0.000*
M.B	0	0	0	0	1	0	0	0	0	0	1	1.1	1	0.7	0	0	.2	0.826
N.B	8	6.8	7	7.6	20	15.3	10	8.3	3	2.4	0	0	2	1.4	2	1.5	11.9	0.000*
L.B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

years old was 17.3% as compared to 15.2% in 4 years, 9.5 % in 5 years and 5.9 % in 6 years showing a trend for a decreased prevalence with the advancing age. Table 4 shows the F-ratio for the frequency distribution for age and sex. There was significant difference between different age groups in the prevalence of nail biting, tongue thrusting and thumb sucking habits ($p < 0.05$). However, there was no significant difference between different age groups in the prevalence of lip biting and mouth breathing. Significant difference in the prevalence of tongue thrusting habit was seen between 4 years and 5 years age groups as well as 5 and 6 years of age group. This difference was also present in nail biting habit in the age groups of 4 years, 5 years and 6 years

DISCUSSION

The present study reported that 11.7% of the children examined had oral habit of some or the other kind. Similar kind of studies were done by Shweta jajoo et al⁷ and Nanda et al⁸ who found out the prevalence of oral habits in school going children of Pune and Lucknow to be 16.8% and 17.0%, respectively. In contrast to this study, higher prevalence

of oral habits was reported by Quashie-Williams⁹ and Bhavya DP¹⁰ who found 34.1% and 38% children examined in Lagos (Nigeria) and Gulbarga (India), respectively, presented with an oral habit. Further, Gauba et al¹¹ reported that only 3% of rural North-Indian children demonstrated oral habits, which is very much in disagreement with our findings.

Looking into the prevalence patterns of various habits, it was seen that out of 11.7% the total children affected with some form of oral habits 1.8% show a tongue thrusting and 5.5% of them had nail biting habit. Shetty and Munshi¹² also found a comparatively low prevalence of tongue thrust and a high prevalence of nail biting habit among Mangalore (India) children in the age range of 3-16 years. They observed an incidence of 3.02% of children as having tongue thrust, which is almost comparable to our study. However, the prevalence of nail biting was 12.7% according to Shetty et al¹² which is not in accordance to the results of this study which shows a prevalence of 5.5%. Our study does not agree with the findings by Gauba et al¹¹ Bhavya et al¹⁰ and Kharbanda et al.¹³ where tongue thrusting and mouth breathing habits were the commonest habits. According to Kharbanda et al¹³ and

Bhavya et al¹⁰ the prevalence of tongue thrusting was almost 18 % which is very high compared to a low of 1.8% as observed in our study. Differences in the observations of the two studies may be a result of variation in the age group selected. Gauba et al¹¹. selected the age group that was starting from 6-15 years as compared to our study in which the age group was 3-6 years. However, our findings do agree with the observations of Gauba et al¹¹ that lip biting was the least prevalent habit. In our study, lip biting was not found, but a percentage as high as 6.0% was observed by Shetty and Munshi.¹²

There existed difference in the prevalence of oral habits at different ages. Oral habits were more prevalent in 3 year old children with 17.3% prevalence. Whereas least prevalence of 5.9% was seen in 6 year old children. This difference in age wise prevalence is also reported by Shetty and Munshi.¹² A steady decrease in oral habits with an increase in age was seen by Quashie and Williams.⁹ The reason for such a decrease with increasing age might be the enhanced perception and awareness which comes with age.

Moreover, the age wise distribution of habits has shown that the most prevalent habit among the 3 years old was thumb sucking (8.6%) which is considered normal by The American Academy of Pediatric Dentistry (AAPD)¹⁴ and seconded by Nail biting (7.2%). Habit prevalent among the 4 years age group was nail biting (12%) seconded by thumb sucking (2.8%), therefore thumb sucking is regressing with age. The presence of thumb sucking at 4 years and above is cause of concern for the dentist as well as the parent, as child might be under stress or anxiety. Aggarwal et al¹⁵ have indirectly related nail biting, thumb sucking etc. to indicate highly stressful and anxiety related behaviors. Surprisingly the dominant habit among 5 years old children is tongue thrusting (6.1%) with thumb sucking and nail biting just at 1.4%.

Further, the prevalence of oral habits among male

and female school going children has been reported in a study done by Kharbanda et.al¹³ and they stated that thumb sucking was more common in girls than boys and mouth breathing was more common in boys compared to girls. Further Gildasya et al¹⁶ and Shweta Jajoo et al⁷ also showed gender wise difference in the prevalence of the habits, with boys showing slight majority. Our study also showed that the nail biting and thumb sucking habits are more prevalent in males (7.8% and 5.2%, respectively) as compared to females (2.8% and 2.5% respectively). Similar difference was notified by Quashie-Williams⁹ with high prevalence in boys, but the difference was statistically in-significant. These findings could be substantiated with the reason as has been proposed in other studies that probably the oral habits in boys are persistent for longer period than girls because boys are more defiant than girls, including when they are told to stop practicing oral habits^{17,18,19} However, tongue thrusting habit is prevalent among females(3.2%) as compared to males (0.5%) showing an increased tendency towards developing mal-occlusion.

CONCLUSIONS

The following conclusions were drawn from the present study:

- 1) 11.7% of school children in Chandigarh areas have some form of oral habit.
- 2) The Nail biting habit is the commonest oral habit (10.6%) followed by thumb sucking (7.7%).
- 3) No lip biting habit was observed.

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